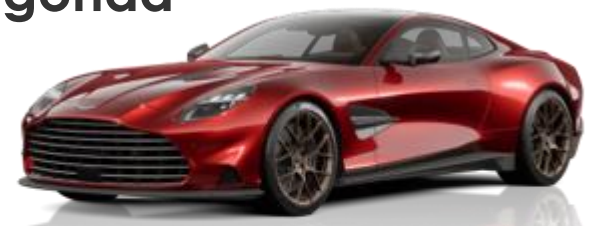
Investigation on Lateral Dynamics Simulation in GT-SUITE

- Supporting companies: **GammaTech Engineering | Aston Martin Lagonda**



- Start date: February/March 2026
- Project duration: 6÷8 months
- Site:
  - GTE's offices in Turin
- Compensations: Meals, travel expenses
- Motivations and Project Scope:
  - Develop a methodology within GT-SUITE to **enhance the prediction of powertrain power requests during handling maneuvers**. The current model performs well on straight paths but struggles to account for additional power demand caused by lateral dynamics.
- Thesis proposal:
  - Start from AML's existing GT-SUITE model and **define curvature radius** as a function of distance along the drive cycle.
  - **Simulate various driving conditions and compare results with experimental data** to identify when lateral dynamics influence powertrain power requests during handling maneuvers.
  - **Apply calibration** by creating and using lookups and maps to align power demand with experimental measurements.
  - If the experimental dataset is sufficiently large, **train a neural network as an alternative** to maps and lookups.
  - **Validate the calibrated (or NN-based) model** against additional experimental data to ensure predictive accuracy.